667027 "ES725460

FIG. 1

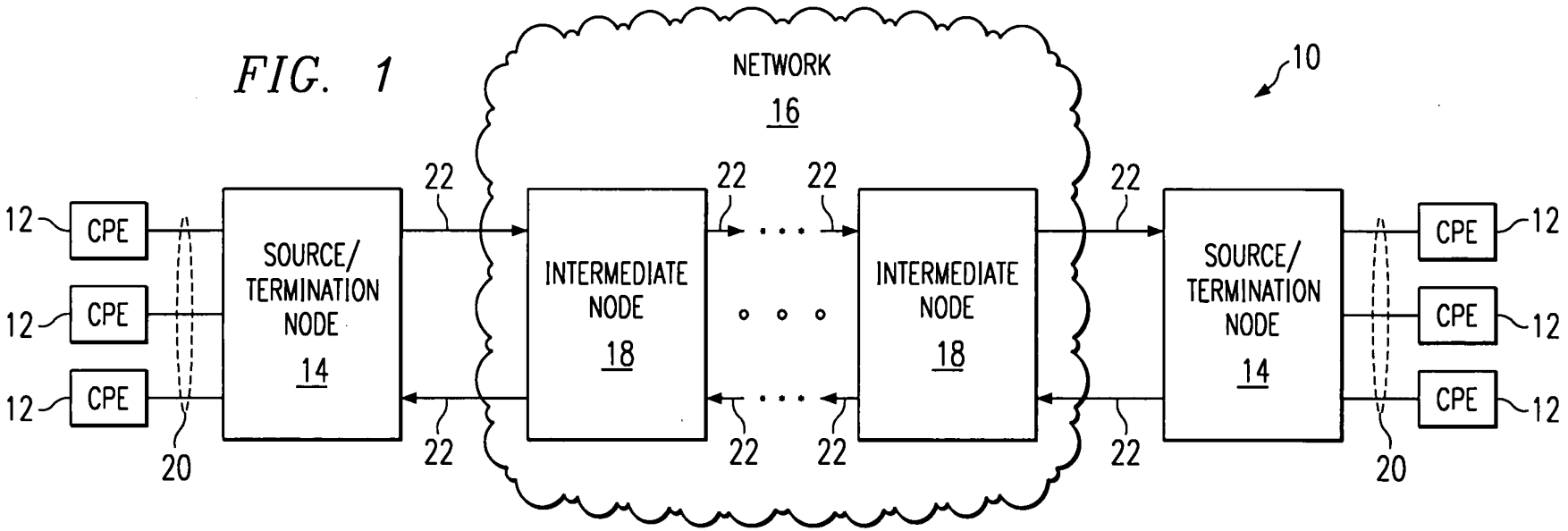
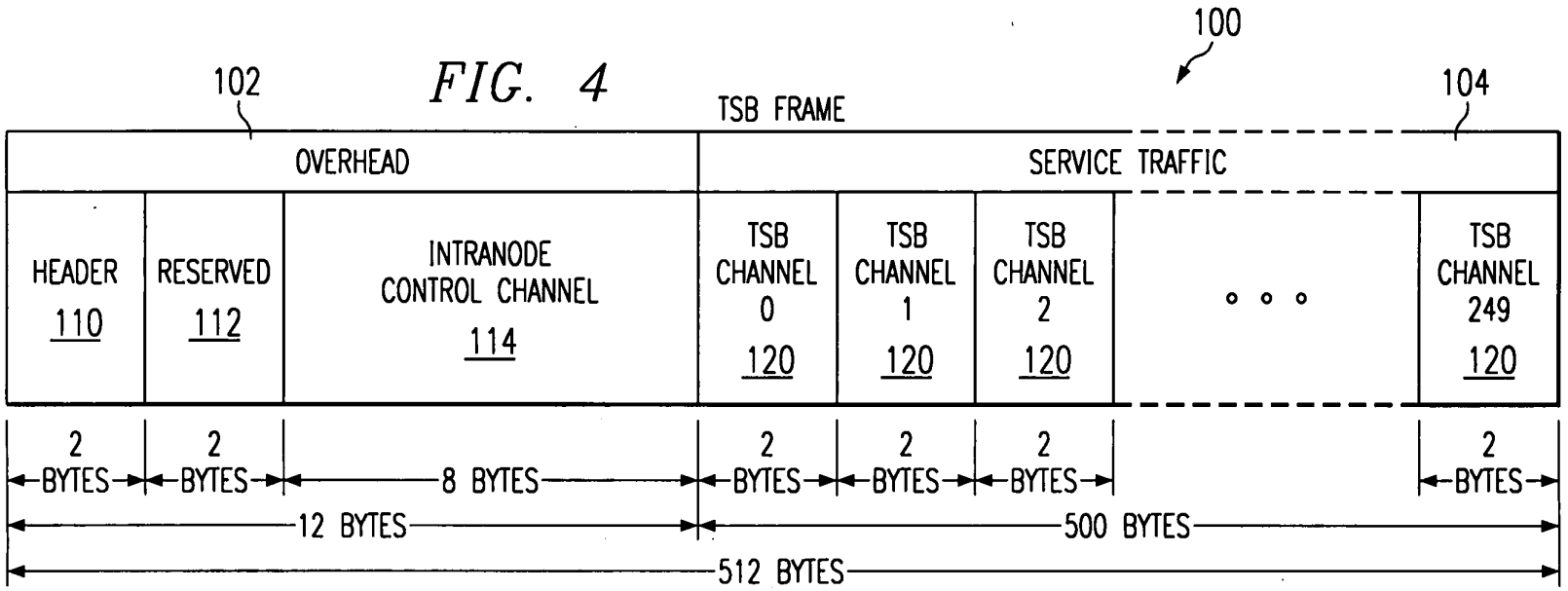


FIG. 4



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1 of 20

6670T" 6542560

FIG. 2

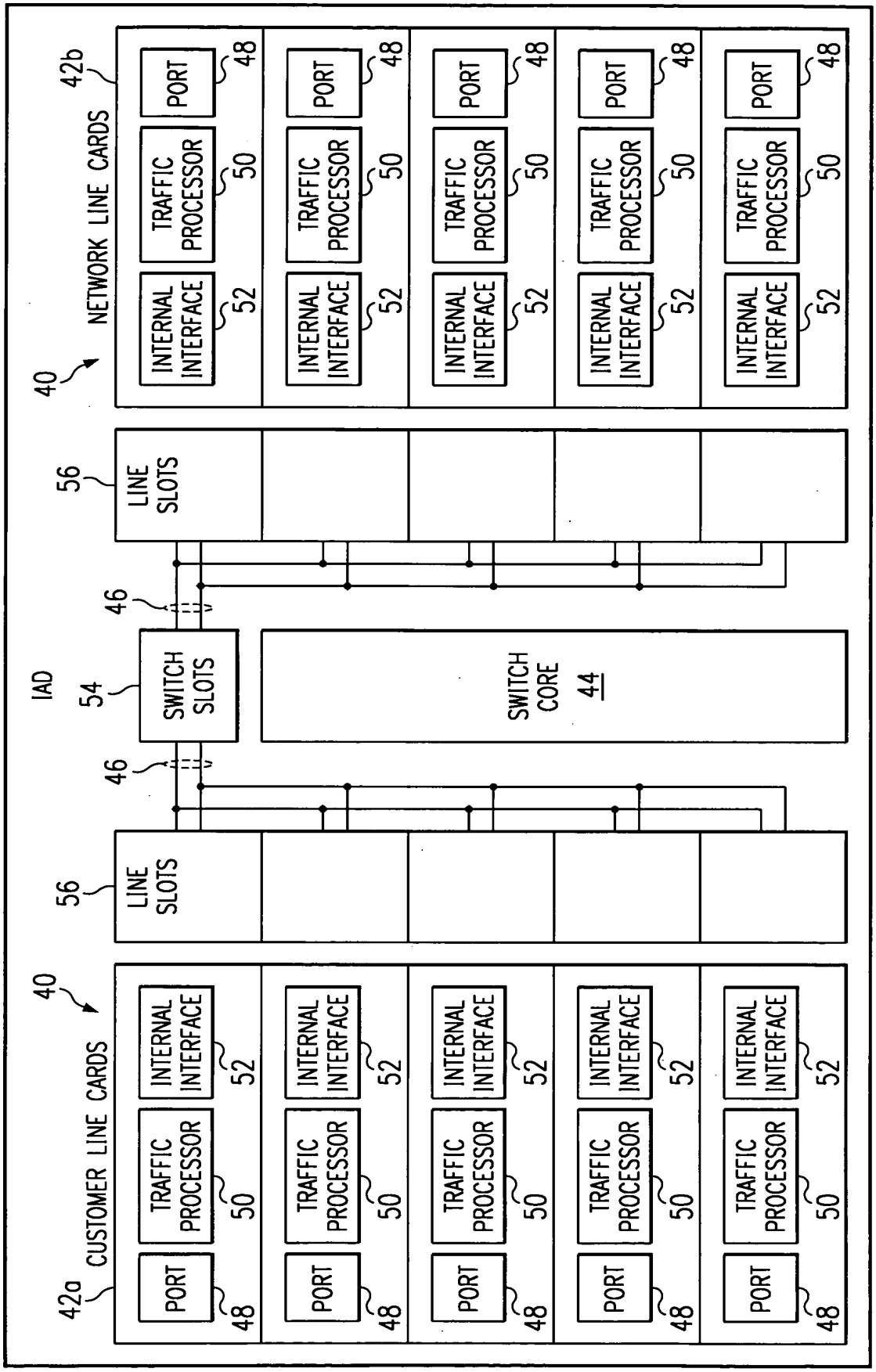
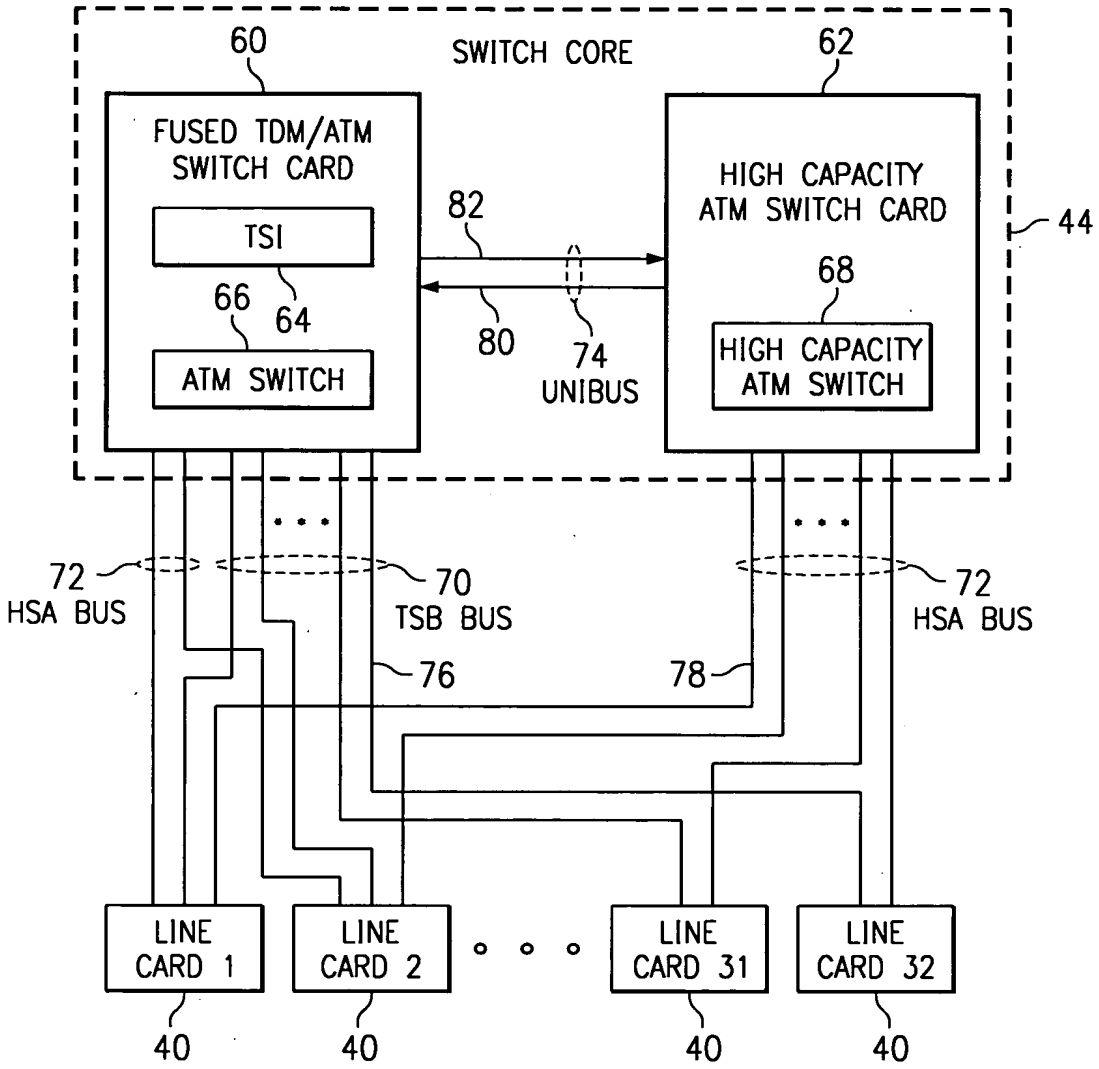


FIG. 3



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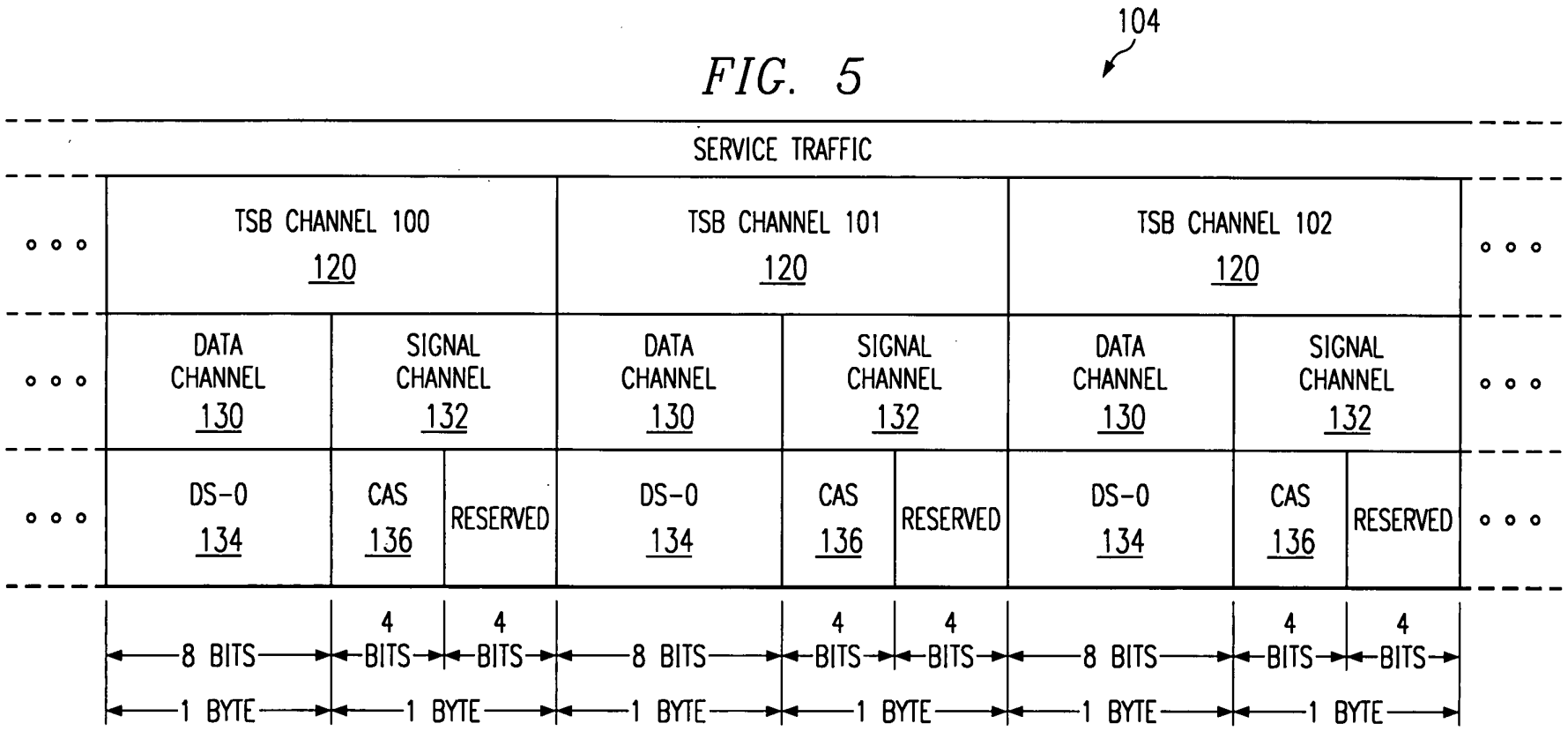
66T02T"E5Z25h60

FIG. 5



6670270 "E5425460

FIG. 6

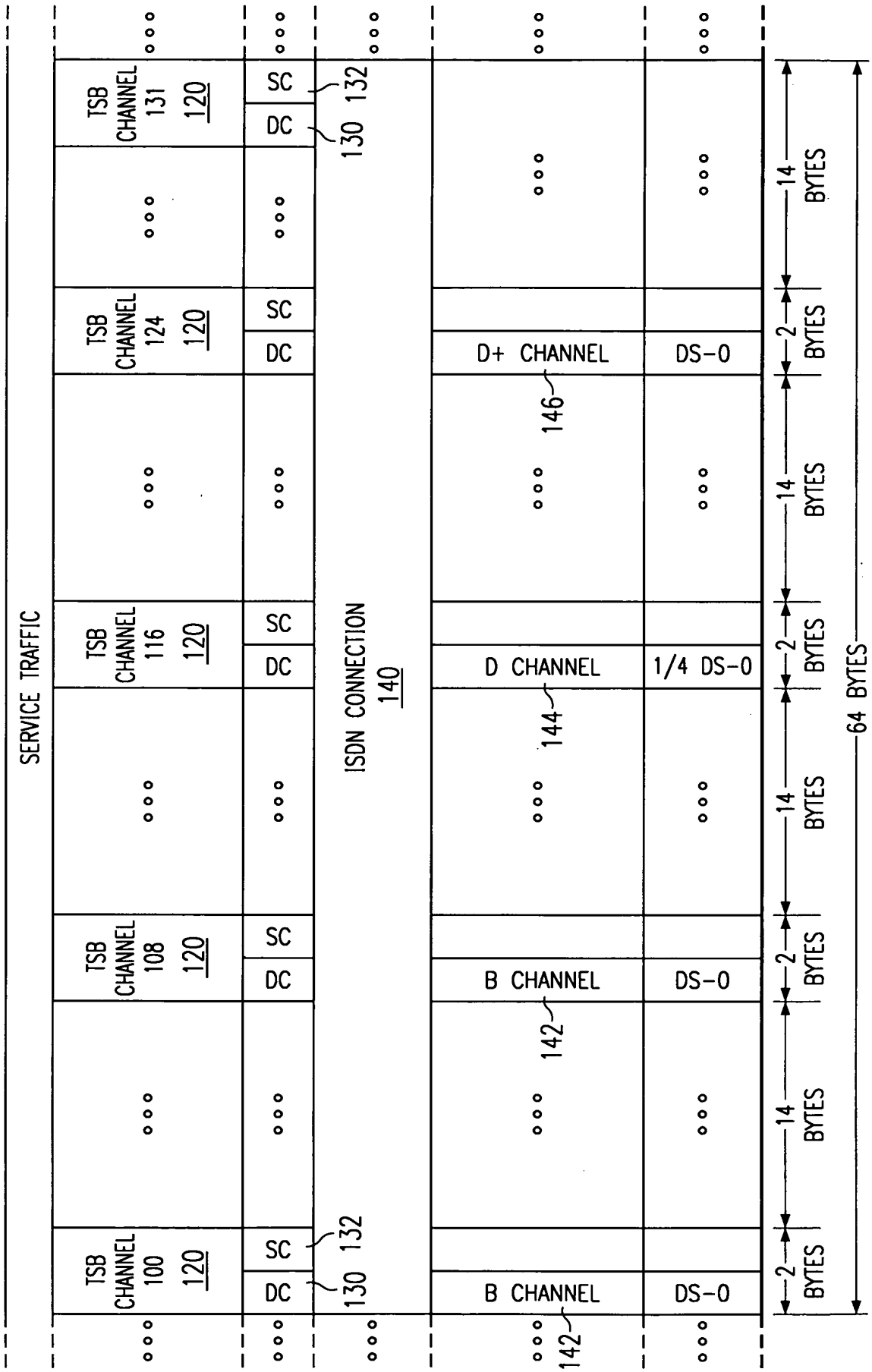


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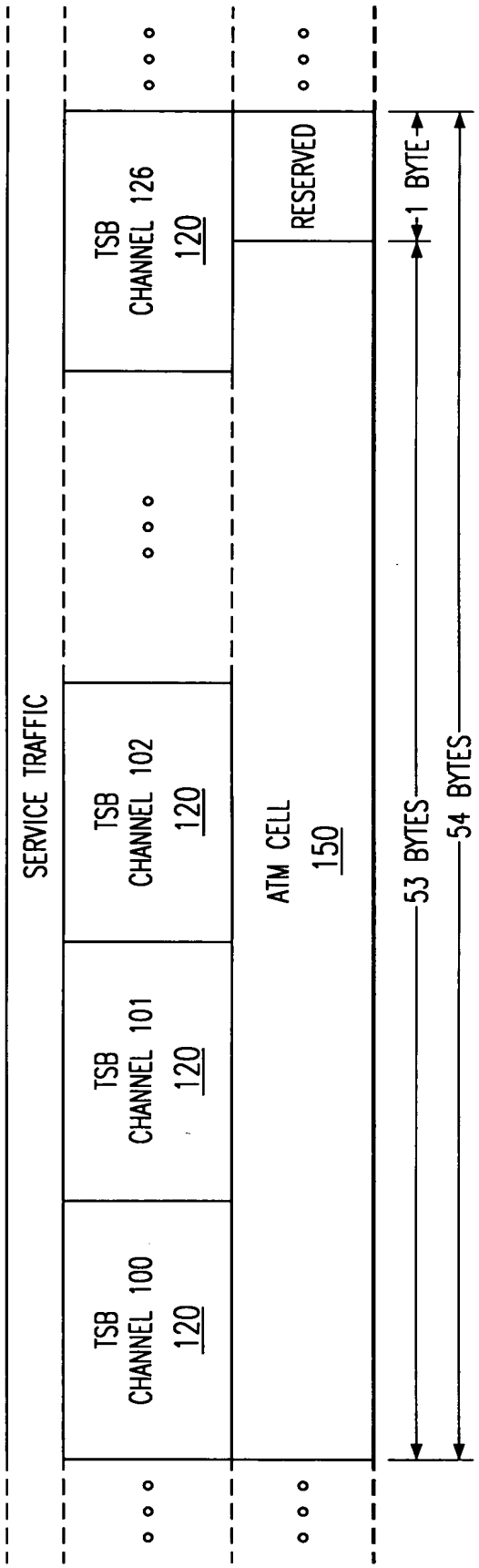
FIG. 7



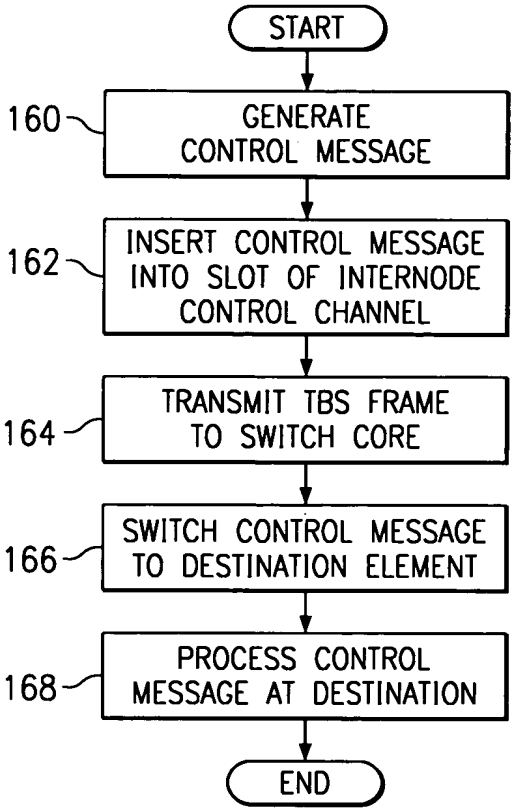

START
160
GENERATE CONTROL MESSAGE
162
INSERT CONTROL MESSAGE INTO SLOT OF INTERNODE CONTROL CHANNEL
164
TRANSMIT TBS FRAME TO SWITCH CORE
166
SWITCH CONTROL MESSAGE TO DESTINATION ELEMENT
168
PROCESS CONTROL MESSAGE AT DESTINATION
END

FIG. 8

FIG. 9

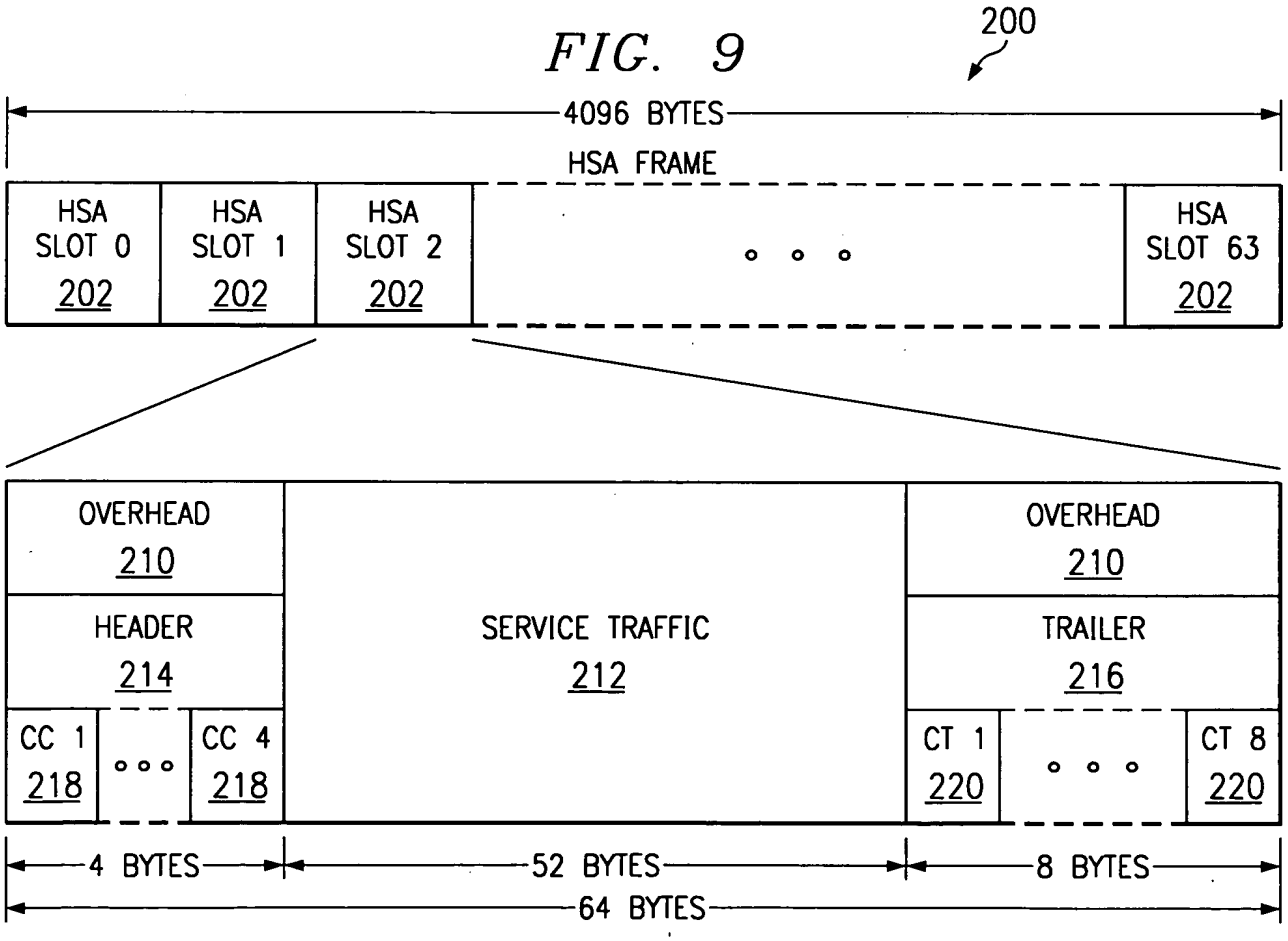

200
4096 BYTES
HSA FRAME
HSA SLOT 0 202
HSA SLOT 1 202
HSA SLOT 2 202
HSA SLOT 63 202
OVERHEAD 210
HEADER 214
CC 1 218
CC 4 218
SERVICE TRAFFIC 212
OVERHEAD 210
TRAILER 216
CT 1 220
CT 8 220
4 BYTES
52 BYTES
8 BYTES
64 BYTES

FIG. 10

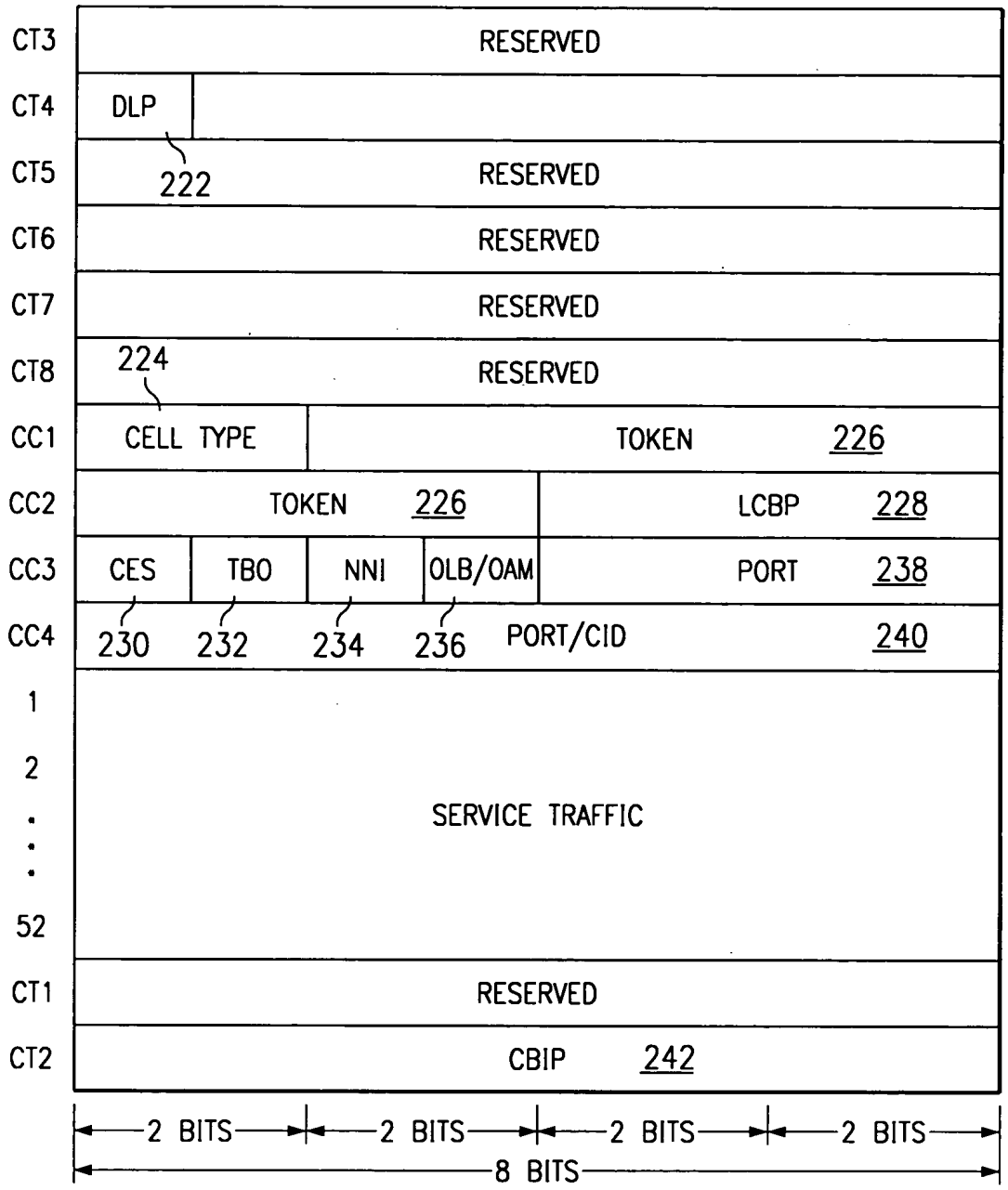

CT3
RESERVED
CT4
DLP
222
CT5
RESERVED
CT6
RESERVED
CT7
RESERVED
CT8
224
RESERVED
CC1
CELL TYPE
TOKEN 226
CC2
TOKEN 226
LCBP 228
CC3
CES
TBO
NNI
OLB/OAM
PORT 238
CC4
230
232
234
236
PORT/CID 240
1
2
52
SERVICE TRAFFIC
CT1
RESERVED
CT2
CBIP 242
2 BITS
2 BITS
2 BITS
2 BITS
8 BITS

FIG. 11

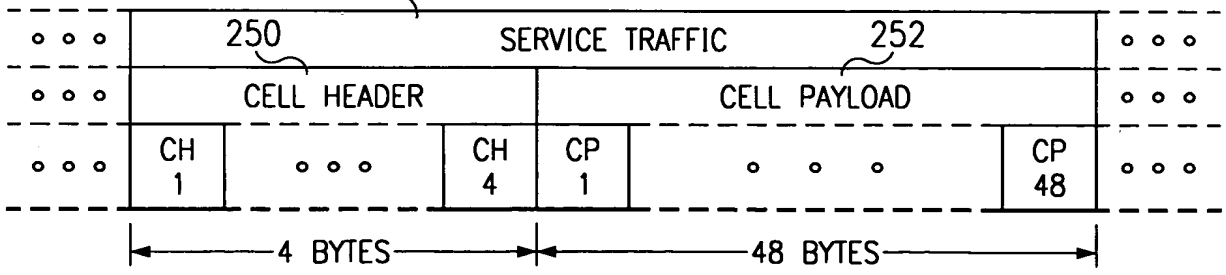

212
250
SERVICE TRAFFIC
252
CELL HEADER
CELL PAYLOAD
CH 1
CH 4
CP 1
CP 48
4 BYTES
48 BYTES

FIG. 12

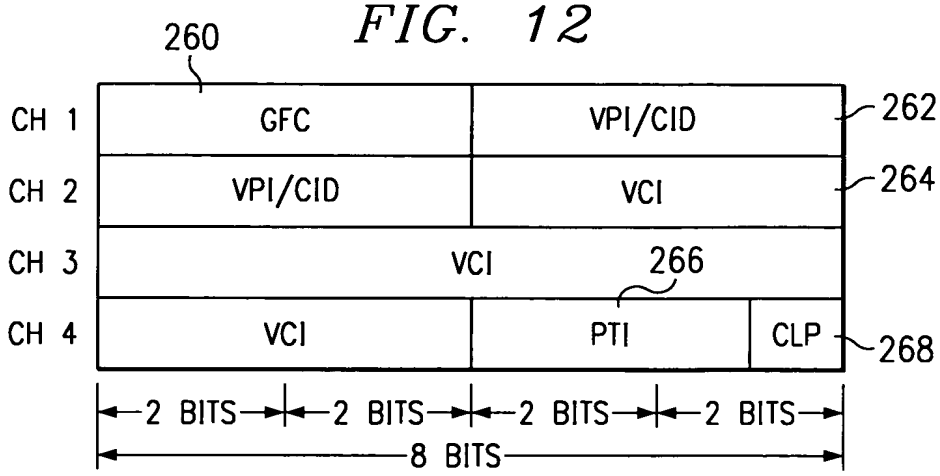
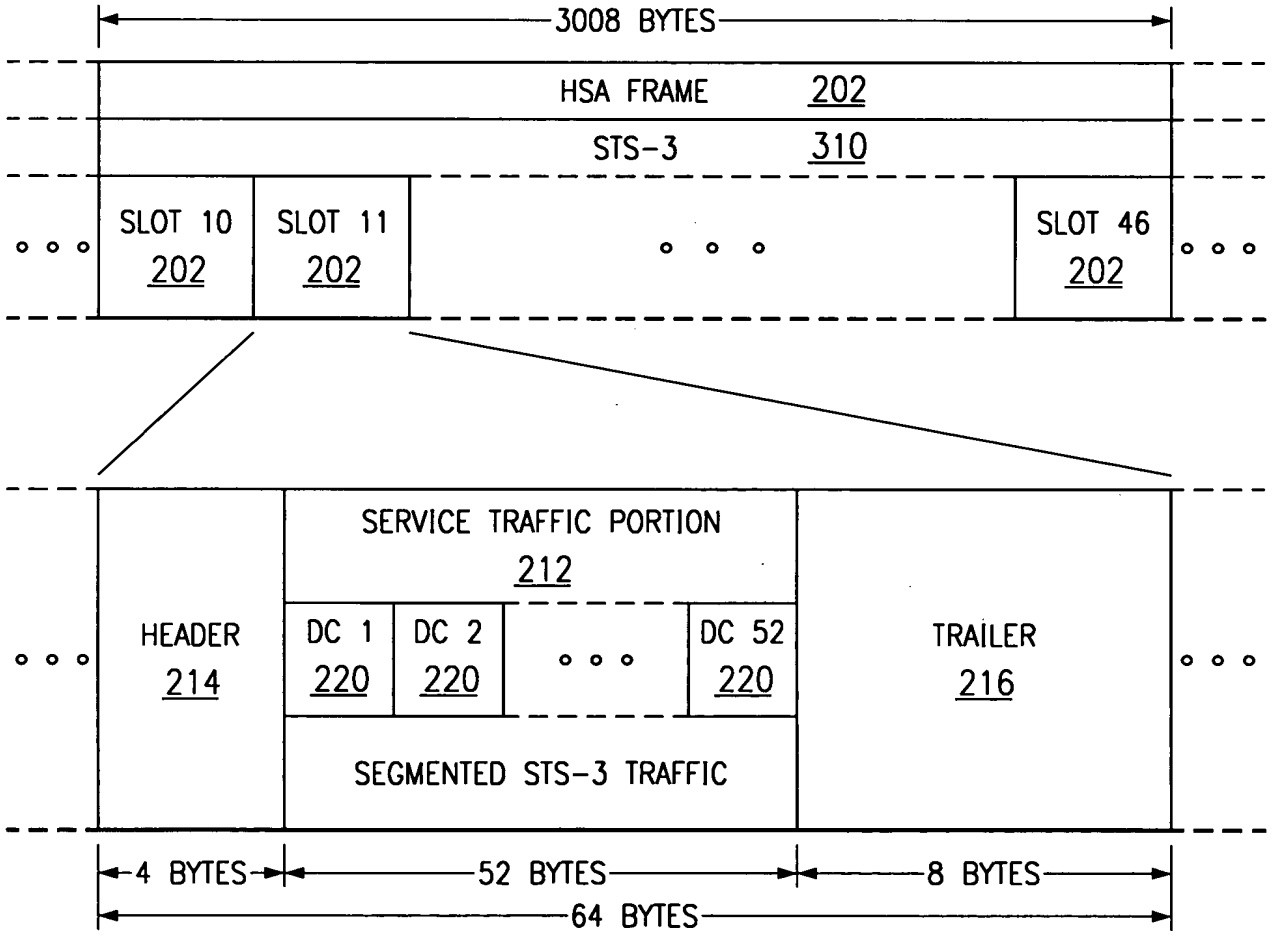

260
CH 1
GFC
VPI/CID
262
CH 2
VPI/CID
VCI
264
CH 3
VCI
266
CH 4
VCI
PTI
CLP
268
2 BITS
2 BITS
2 BITS
2 BITS
8 BITS

FIG. 16


3008 BYTES
HSA FRAME 202
STS-3 310
SLOT 10 202
SLOT 11 202
SLOT 46 202
SERVICE TRAFFIC PORTION 212
HEADER 214
DC 1 220
DC 2 220
DC 52 220
TRAILER 216
SEGMENTED STS-3 TRAFFIC
4 BYTES
52 BYTES
8 BYTES
64 BYTES

66T021 "E3/G3th60

FIG. 13

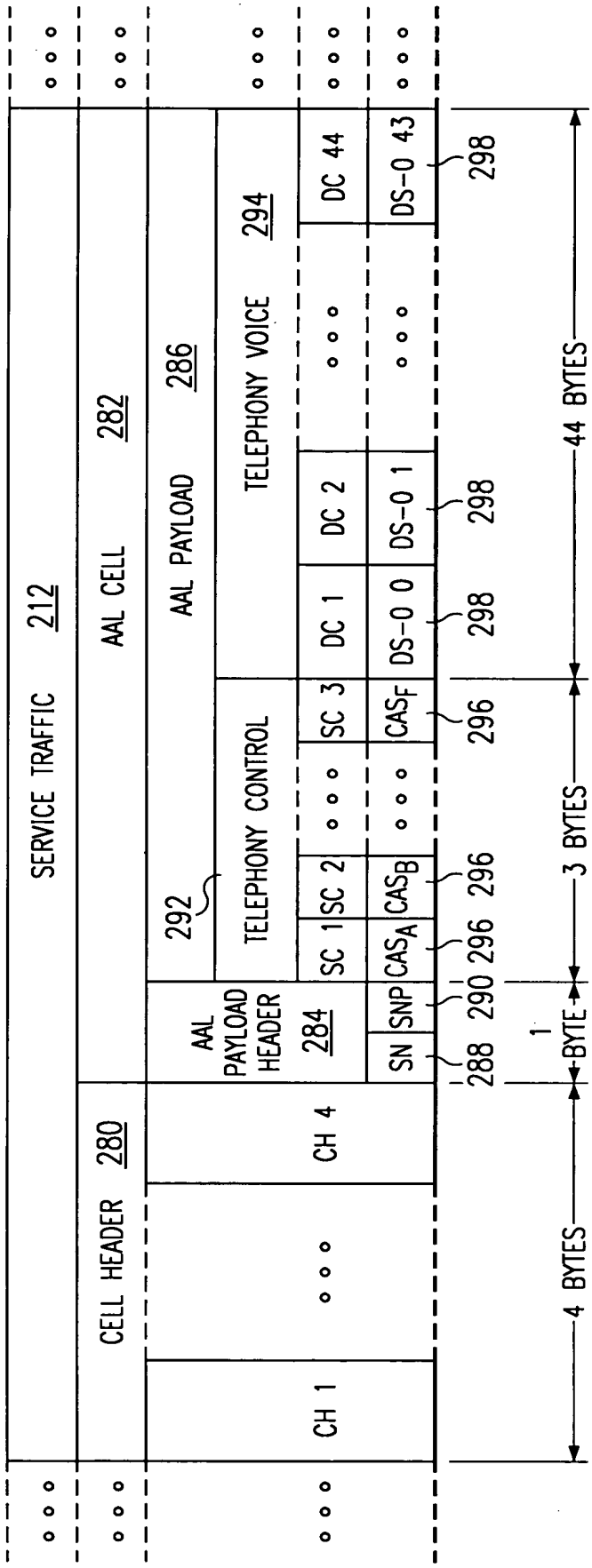


FIG. 14

DS0-n VALUE ASSOCIATED WITH CAS_N POSITION TO SN VALUE

SN	CAS_A	CAS_B	CAS_C	CAS_D	CAS_E	CAS_F
0	0	1	2	3	4	5
1	3	4	5	6	7	8
2	6	7	8	9	10	11
3	9	10	11	12	13	14
4	12	13	14	15	16	17
5	15	16	17	18	19	20
6	18	19	20	21	22	23
7	21	22	23	24	25	26
8	24	25	26	27	28	29
9	27	28	29	30	31	32
10	30	31	32	33	34	35
11	33	34	35	36	37	38
12	36	37	38	39	40	41
13	39	40	41	42	43	UNDEF
14	42	43	UNDEF	0	1	2
15	0	1	2	3	4	5

FIG. 15

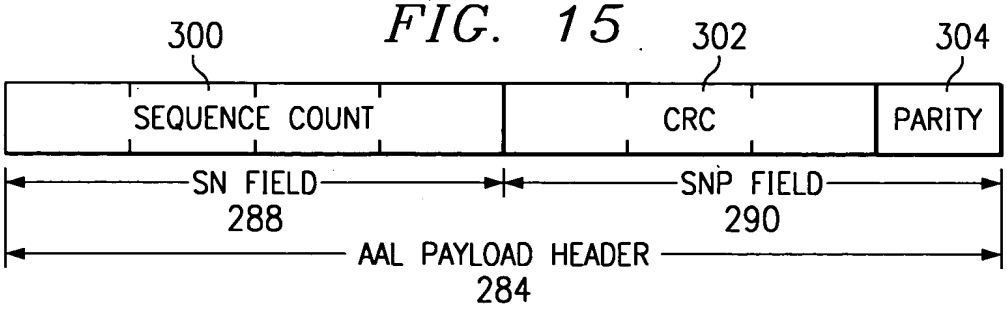


FIG. 17

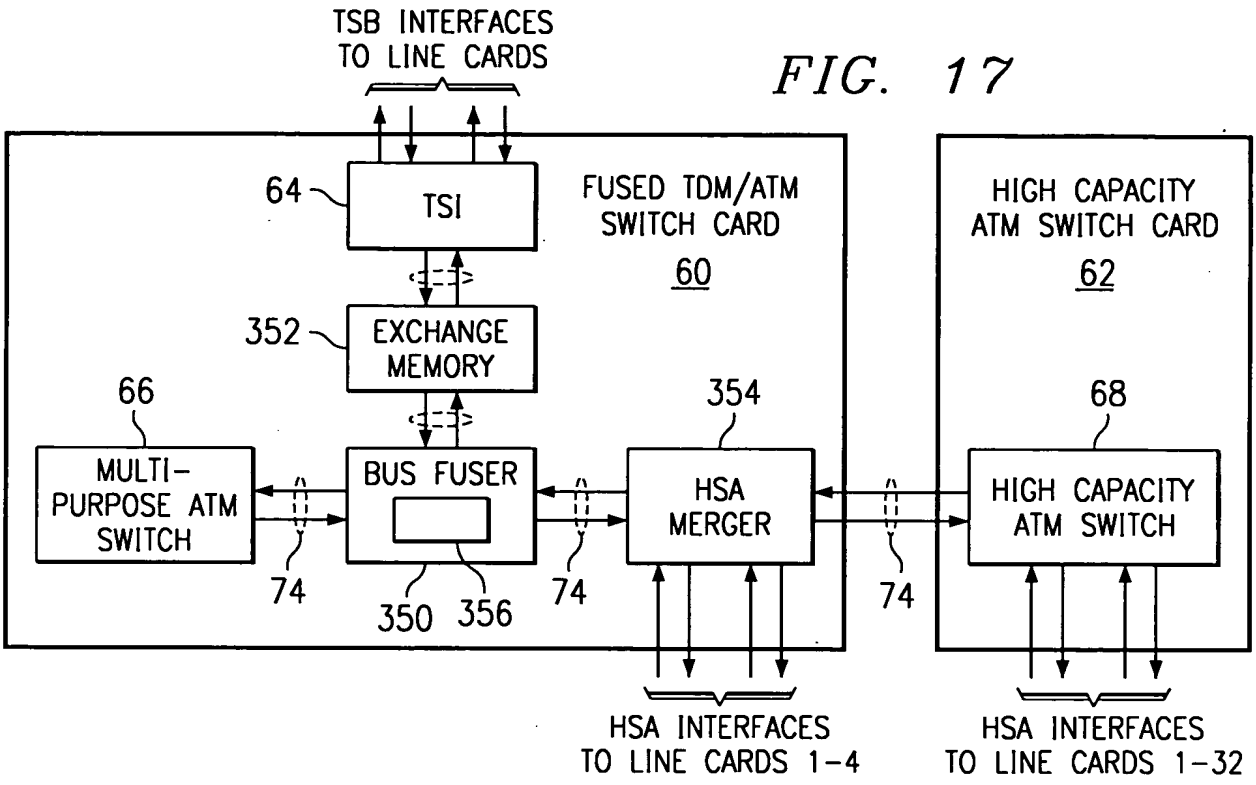
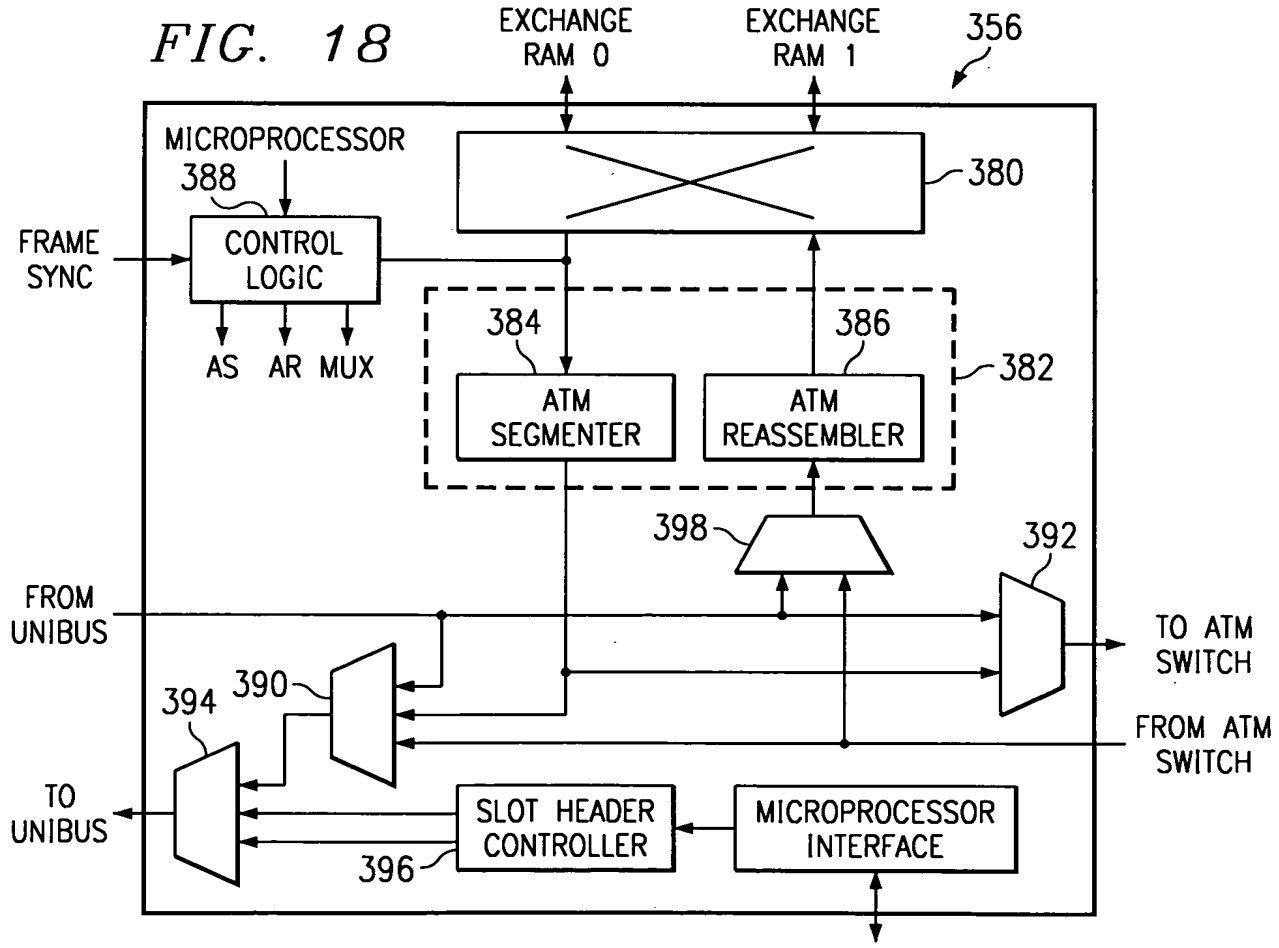

TSB INTERFACES
TO LINE CARDS
64
TSI
FUSED TDM/ATM
SWITCH CARD
60
HIGH CAPACITY
ATM SWITCH CARD
62
352
EXCHANGE
MEMORY
66
354
68
MULTI-
PURPOSE ATM
SWITCH
BUS FUSER
HSA
MERGER
HIGH CAPACITY
ATM SWITCH
74
74
74
350
356
HSA INTERFACES
TO LINE CARDS 1-4
HSA INTERFACES
TO LINE CARDS 1-32

FIG. 18


EXCHANGE
RAM 0
EXCHANGE
RAM 1
356
MICROPROCESSOR
388
380
FRAME
SYNC
CONTROL
LOGIC
AS AR MUX
384
386
382
ATM
SEGMENTER
ATM
REASSEMBLER
398
392
FROM
UNIBUS
TO ATM
SWITCH
394
390
FROM ATM
SWITCH
TO
UNIBUS
SLOT HEADER
CONTROLLER
MICROPROCESSOR
INTERFACE
396

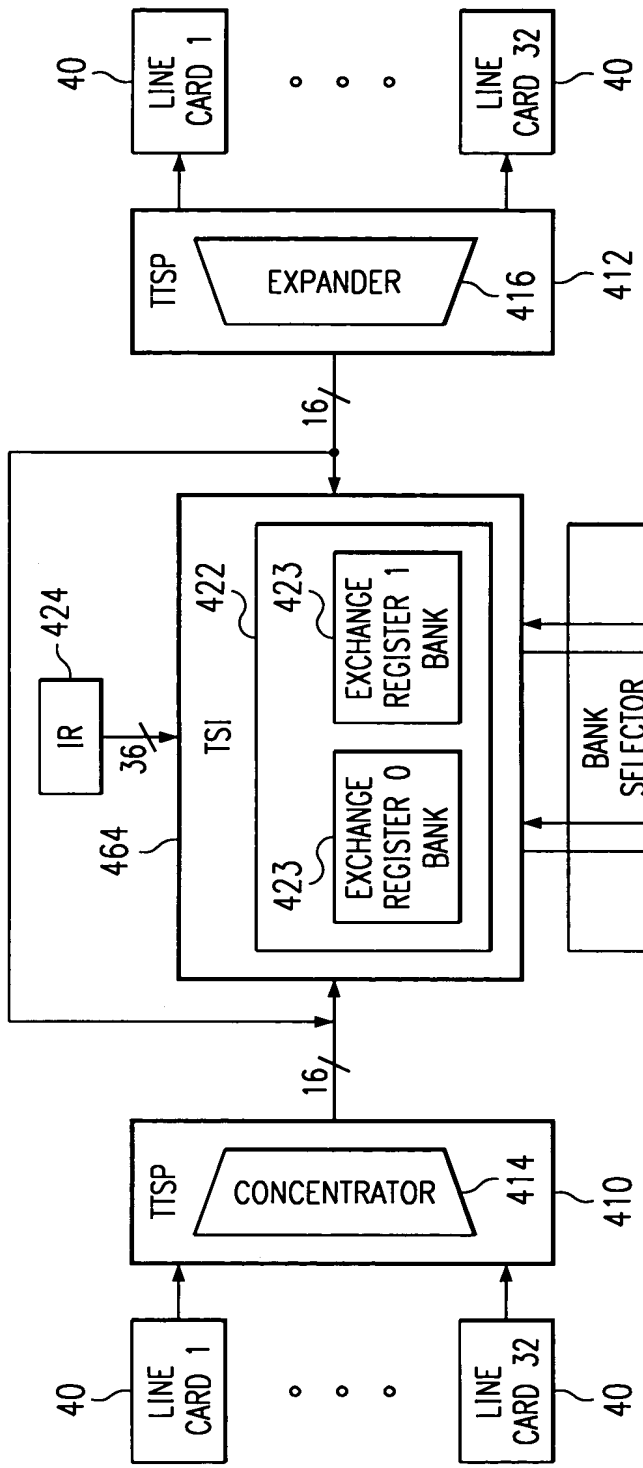

40
LINE CARD 1
LINE CARD 32
40
TTSP
EXPANDER
416
412
16
424
IR
36
464
TSI
422
423
EXCHANGE REGISTER 1 BANK
423
EXCHANGE REGISTER 0 BANK
BANK SELECTOR
EXCHANGE RAM 1
EXCHANGE RAM 0
420
352
16
TTSP
CONCENTRATOR
414
410
40
LINE CARD 1
LINE CARD 32
40

FIG. 19

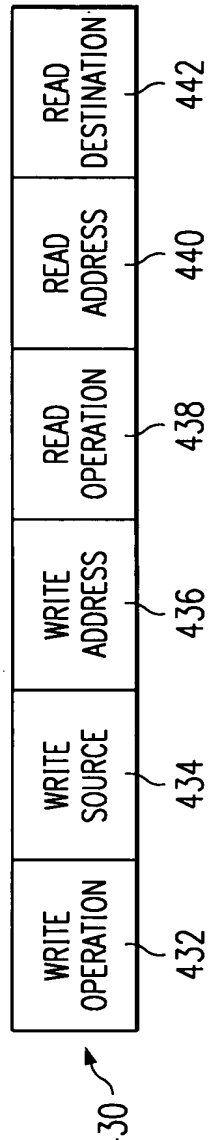

READ DESTINATION
442
READ ADDRESS
440
READ OPERATION
438
WRITE ADDRESS
436
WRITE SOURCE
434
WRITE OPERATION
432
430

FIG. 20

FIG. 21

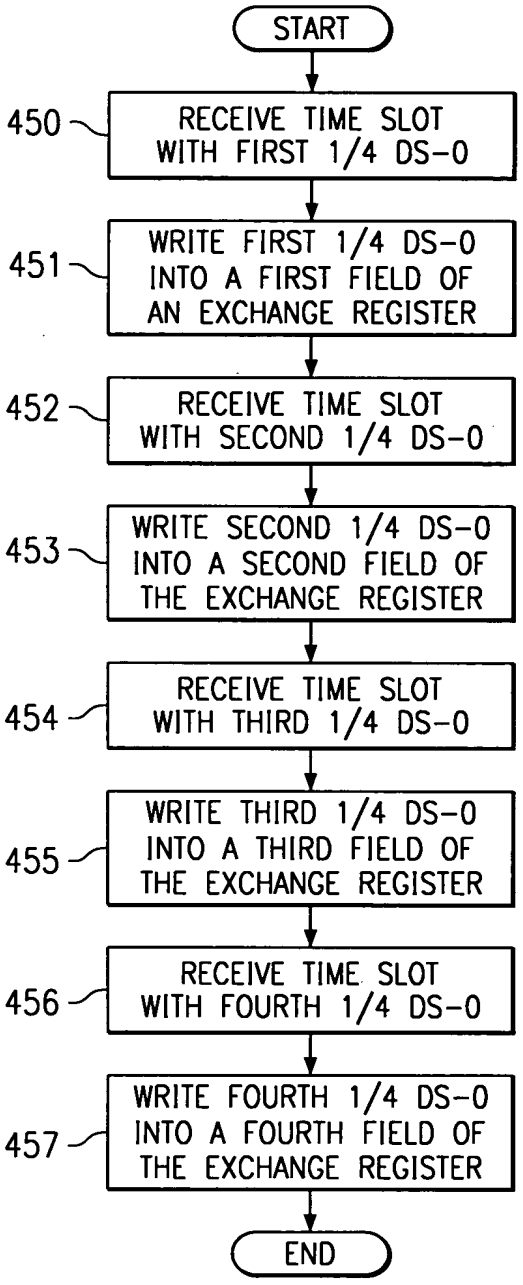


FIG. 22

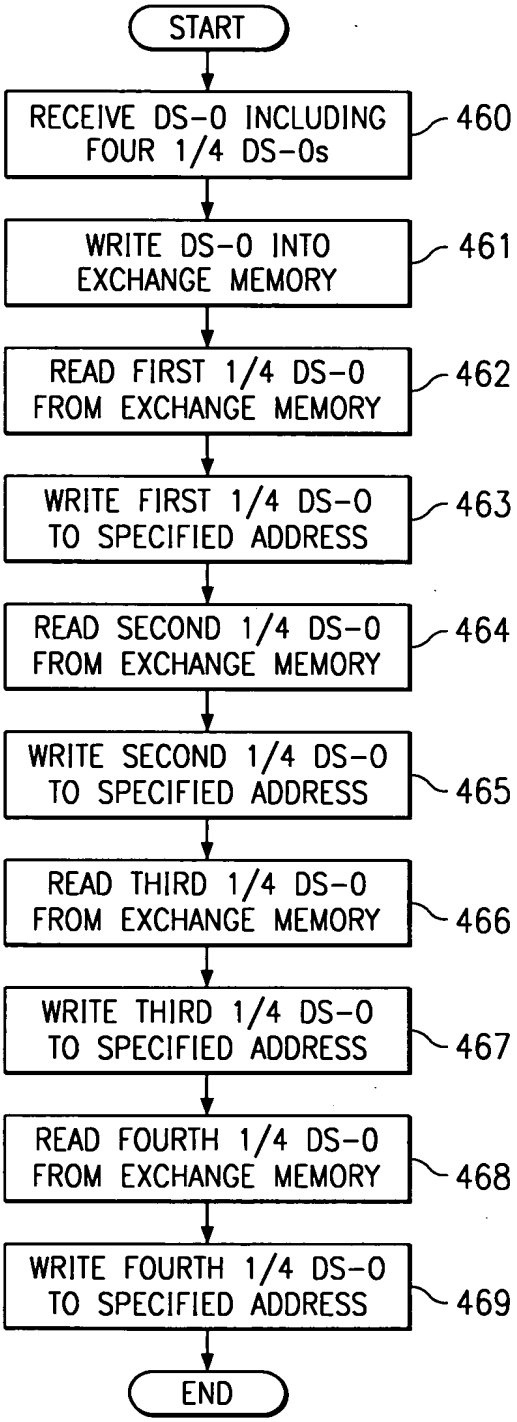


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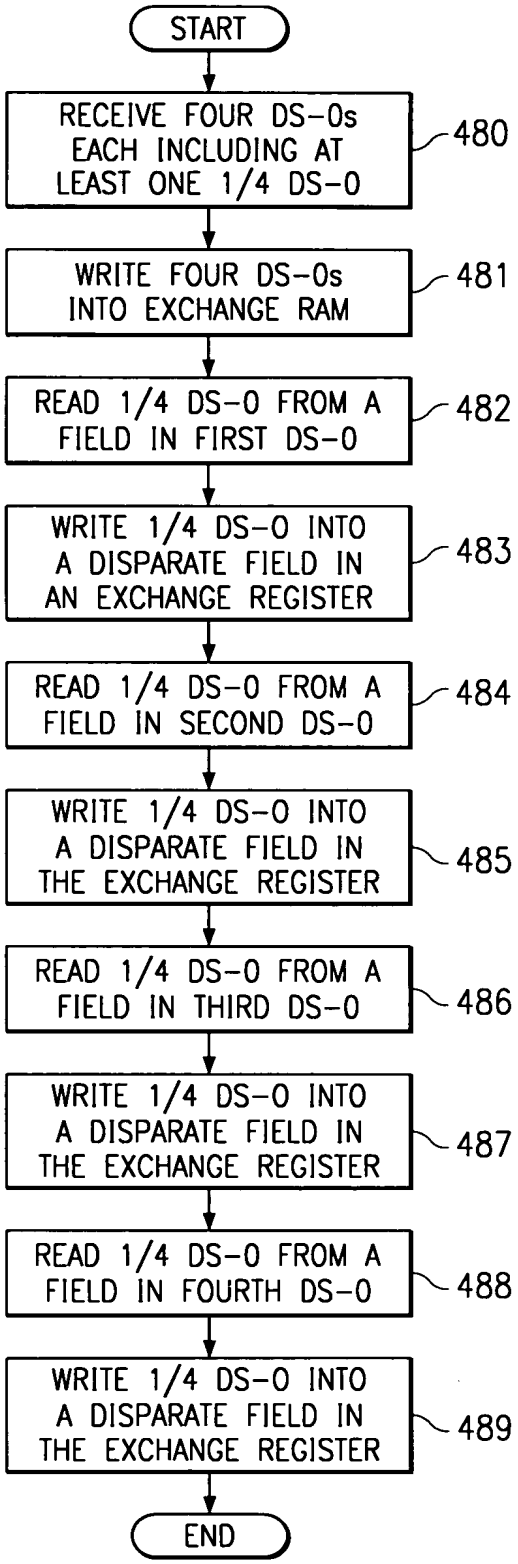
FIG. 23



0952953.1

FIG. 24

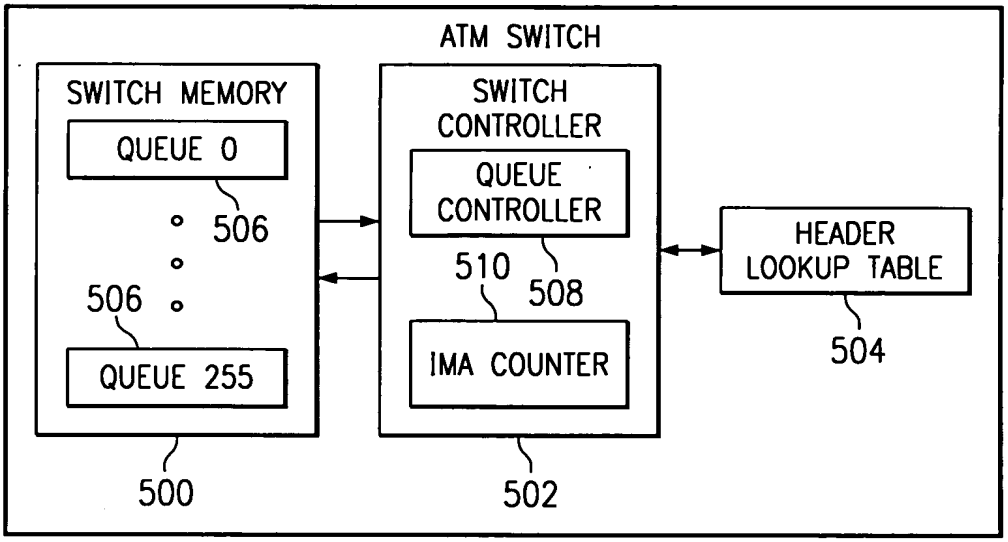


FIG. 25

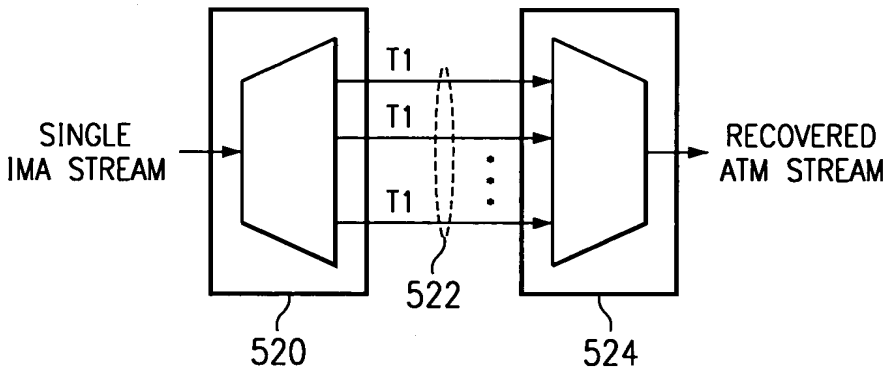


FIG. 28

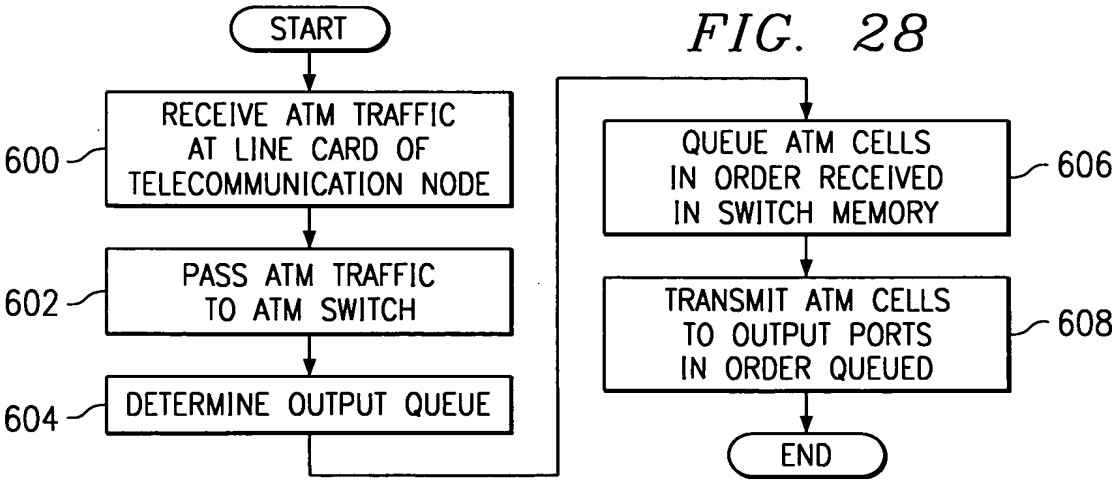


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FIG. 26

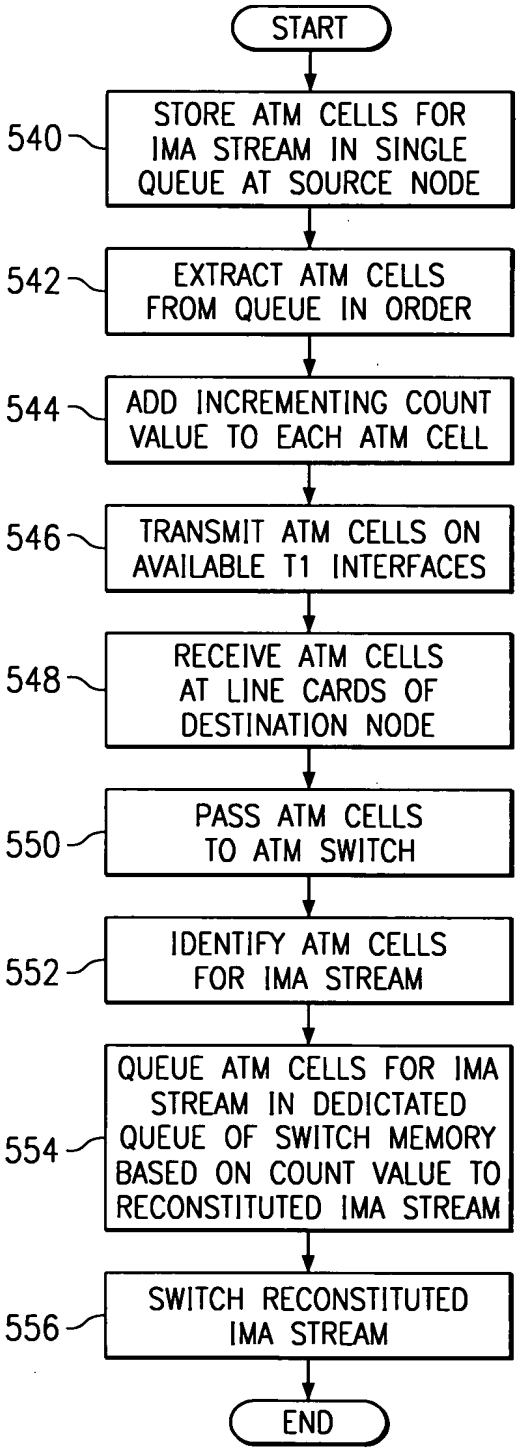
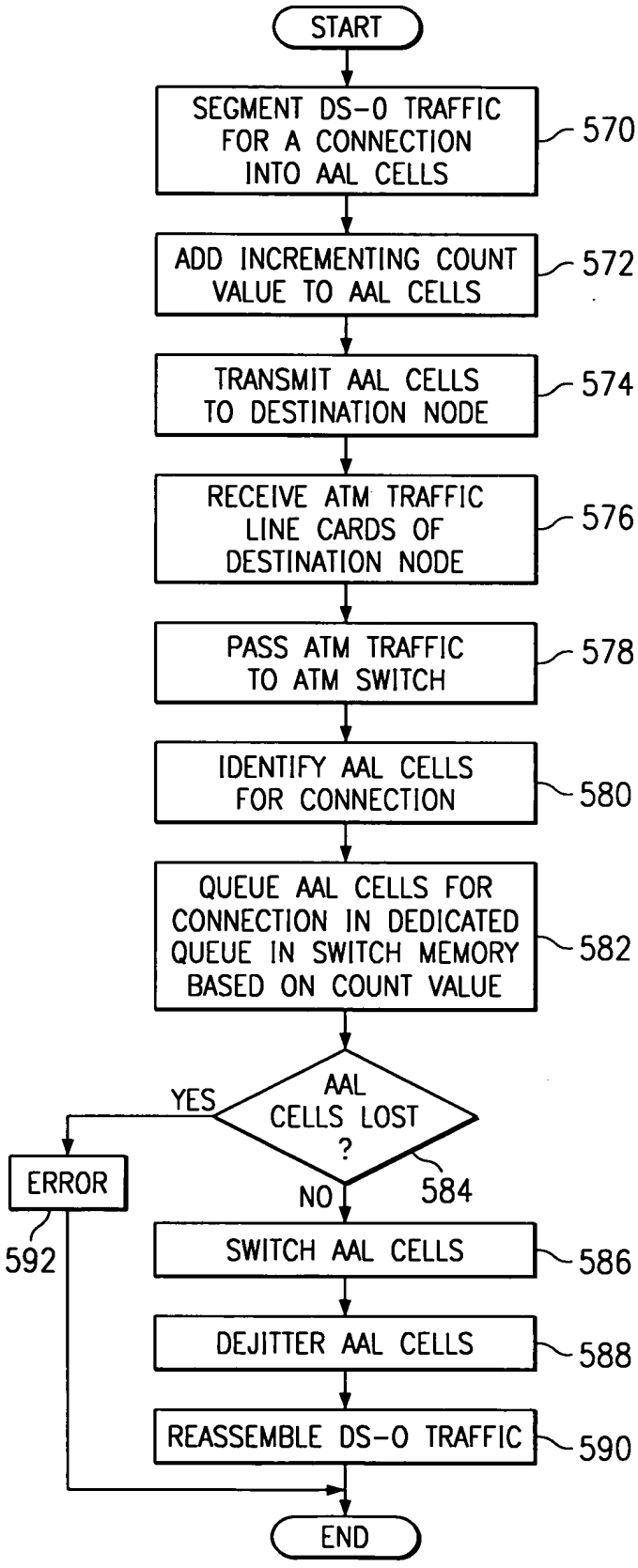


FIG. 27



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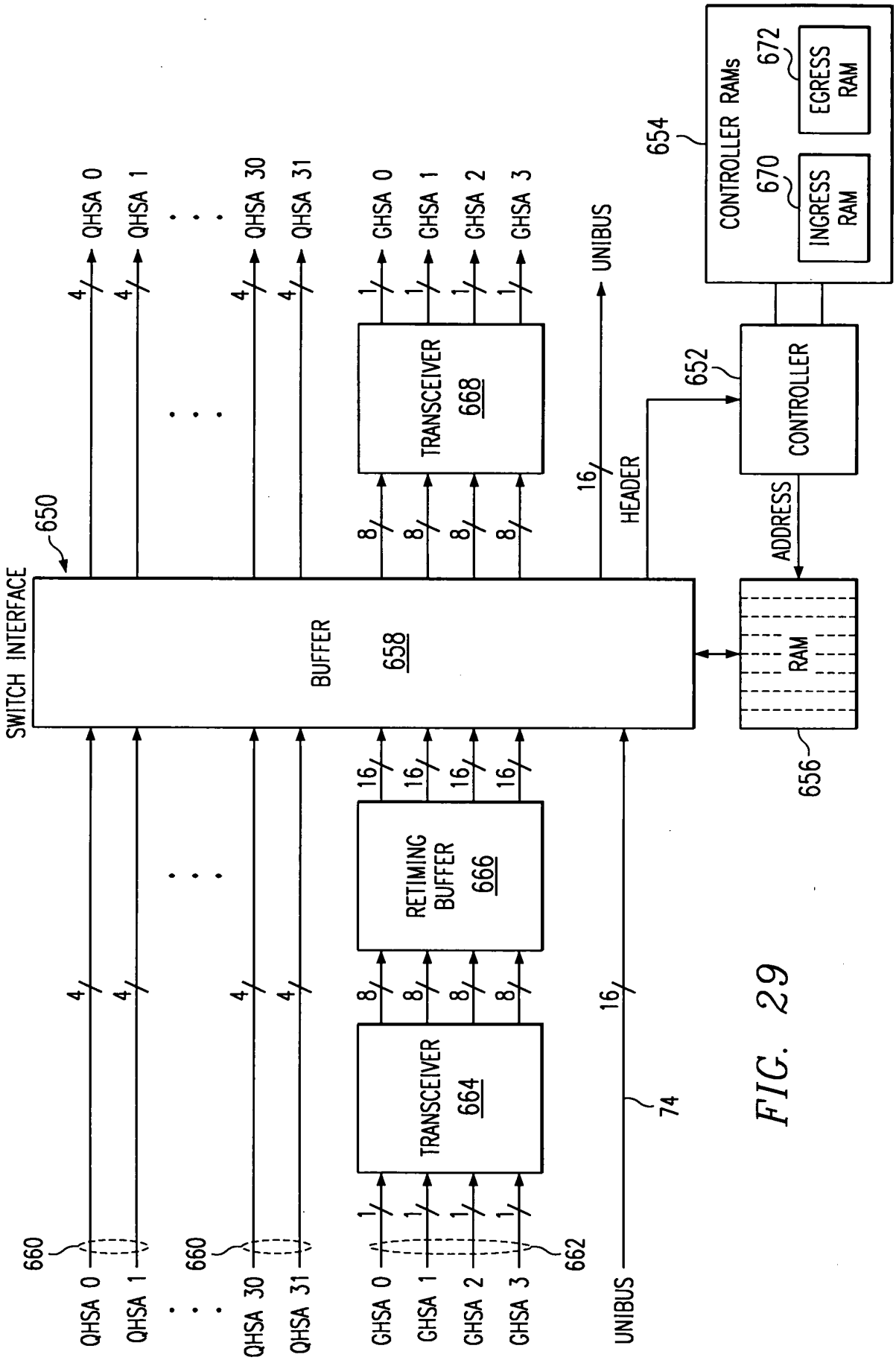

SWITCH INTERFACE
650
BUFFER
658
QHSA 0
QHSA 1
QHSA 30
QHSA 31
GHSA 0
GHSA 1
GHSA 2
GHSA 3
UNIBUS
HEADER
TRANSCEIVER
668
TRANSCEIVER
664
RETIMING BUFFER
666
CONTROLLER
652
ADDRESS
RAM
656
CONTROLLER RAMs
654
INGRESS RAM
670
EGRESS RAM
672
660
662
74
4
8
16
1

FIG. 29

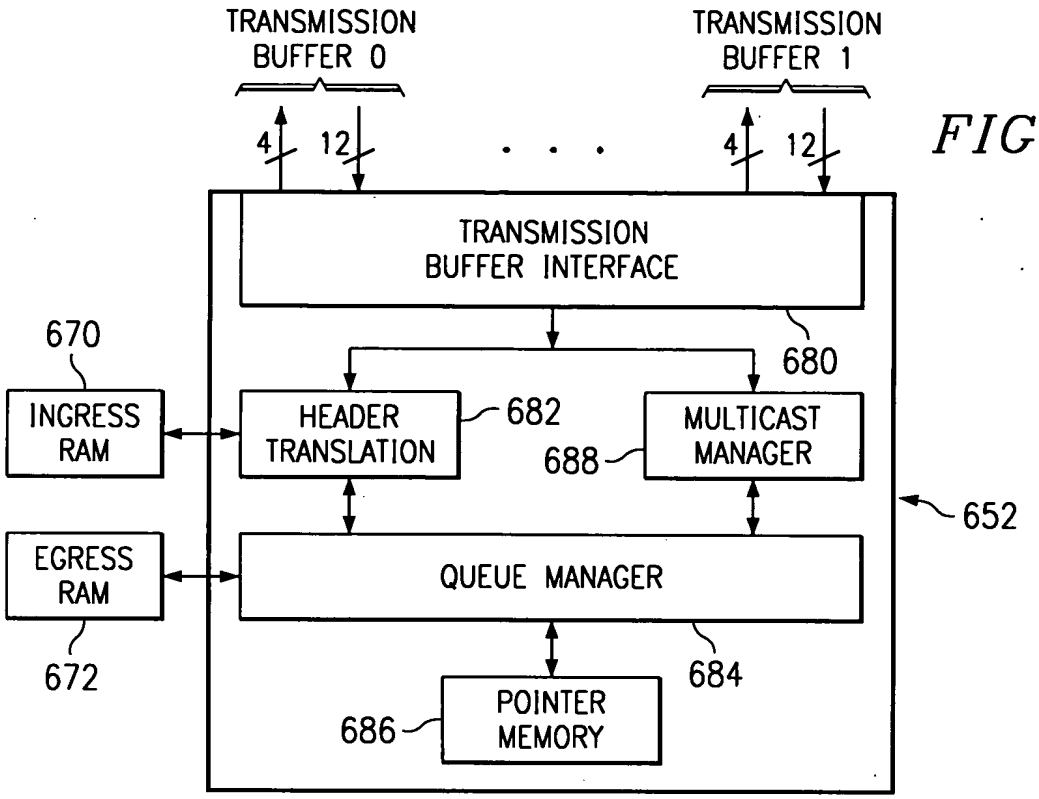


FIG. 30

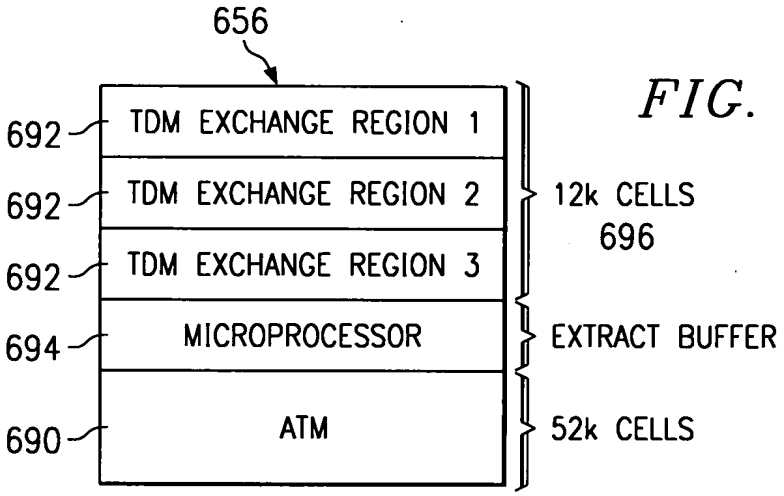


FIG. 31

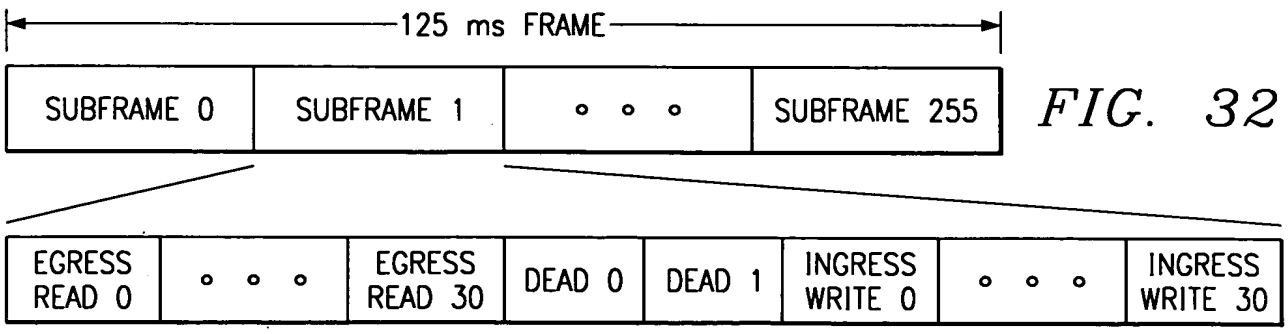


FIG. 32

FIG. 33

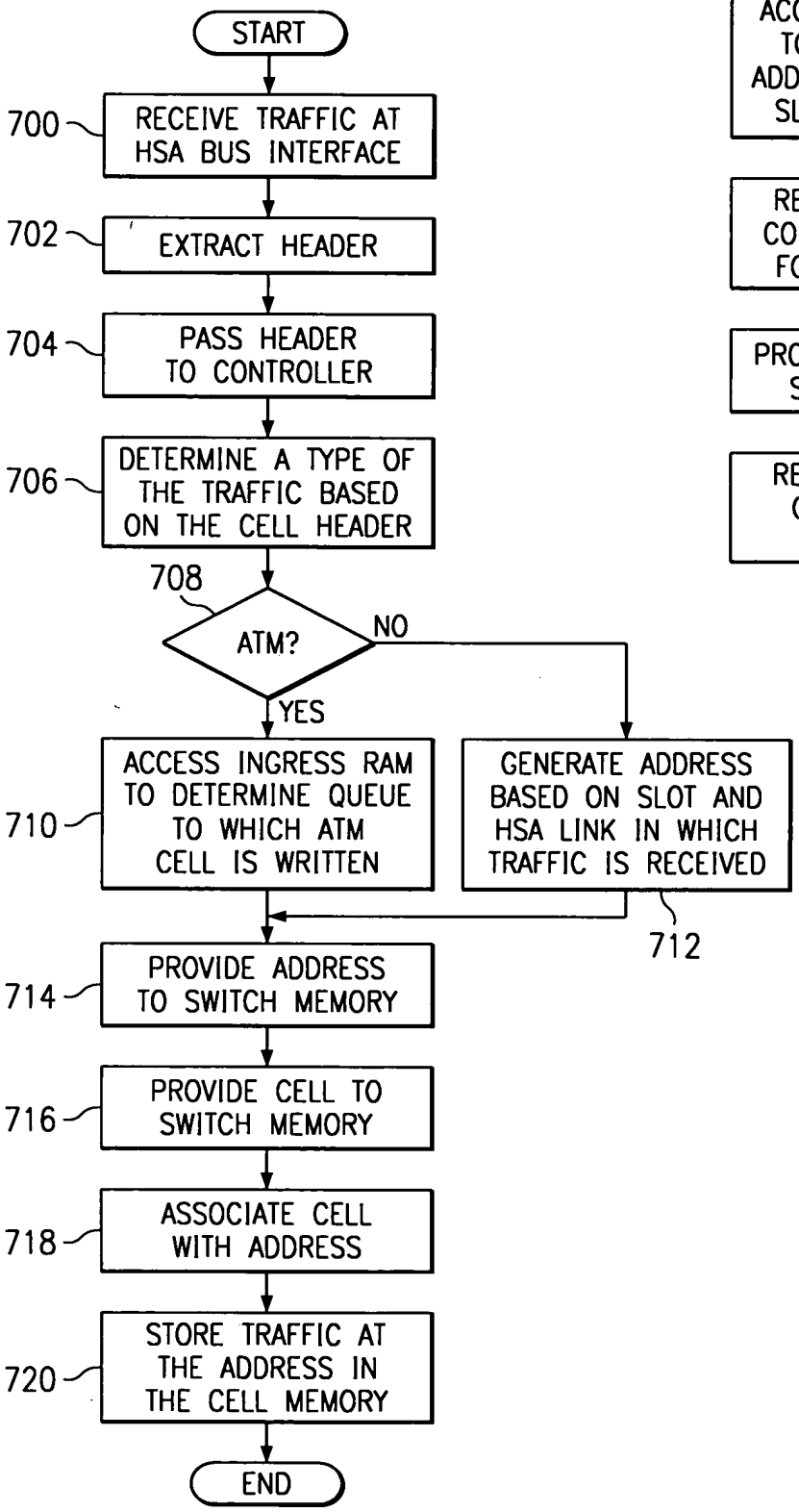
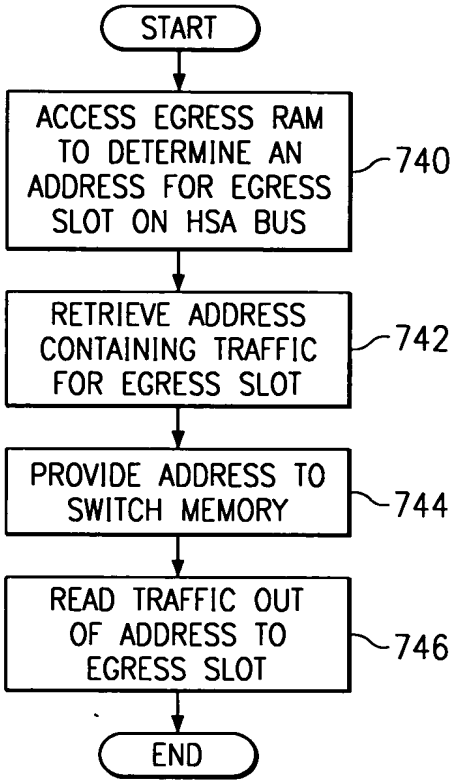

START
700
RECEIVE TRAFFIC AT HSA BUS INTERFACE
702
EXTRACT HEADER
704
PASS HEADER TO CONTROLLER
706
DETERMINE A TYPE OF THE TRAFFIC BASED ON THE CELL HEADER
708
ATM?
NO
YES
710
ACCESS INGRESS RAM TO DETERMINE QUEUE TO WHICH ATM CELL IS WRITTEN
GENERATE ADDRESS BASED ON SLOT AND HSA LINK IN WHICH TRAFFIC IS RECEIVED
712
714
PROVIDE ADDRESS TO SWITCH MEMORY
716
PROVIDE CELL TO SWITCH MEMORY
718
ASSOCIATE CELL WITH ADDRESS
720
STORE TRAFFIC AT THE ADDRESS IN THE CELL MEMORY
END

FIG. 34


START
ACCESS EGRESS RAM TO DETERMINE AN ADDRESS FOR EGRESS SLOT ON HSA BUS
740
RETRIEVE ADDRESS CONTAINING TRAFFIC FOR EGRESS SLOT
742
PROVIDE ADDRESS TO SWITCH MEMORY
744
READ TRAFFIC OUT OF ADDRESS TO EGRESS SLOT
746
END